REMARKS

Summary of the Office Action

Claims 1-36 are pending in the application.

Claims 1, 3-13, 15-25 and 27-36 have been rejected under 35 U.S.C. § 103(a) as being obvious from Keshav U.S. Patent No. 5,627,970 ("Keshav") in view of Derby et al. U.S. Patent No. 5,359,593 ("Derby"). Claims 2, 4, and 26 have been similarly rejected under 35 U.S.C. § 103(a) as being obvious from Keshav in view of Gittins et al. U.S. Patent No. 5,526,350 ("Gittins").

Claims 1-36 have also been rejected under 35 U.S.C. § 112, first paragraph. Further, amendments to the specification have been objected to under 35 U.S.C. § 132 as new matter.

Applicants' Reply

Applicants respectfully traverse the §112 and prior art rejections of the claims, and the § 132 objection to the amended specification.

§ 132 objection to the amended specification

Applicants note, as previously submitted, that the phrase "a proper time sequence of data received" is equivalent to the original phrase "the data arrive on time." For where the data does arrive on time, the received data is necessarily in a proper time sequence. Conversely, if the received data do not arrive on time, the received data is not necessarily in a proper time sequence.

Applicants respectfully submit that the Examiner's suggestion that "time sequence is chronological order and not sequential number order of succession" is incomplete or at least confusing. A proper chronological order necessarily implies a "proper" sequential

number order of succession of the received data. Applicants note that the sequential numbers

need not be consecutive to be "proper," but only have to be desirable or acceptable. For

example, according to applicants' invention "it is acceptable to lose an occasional frame of video

than to have the video start and stop." (See e.g., last sentence in the Background of the Invention

section). Thus, data arriving on time implies a proper sequential number order of succession (in

Examiner's nomenclature) of data frames even if some of the data frames are missing (i.e., even

if the sequence is numerically incomplete by having missing frames, the ordering of the received

frames is still proper). As the phrase is used by the applicants, a sequence: 1, 2, 4, 5, 9, 10, etc.,

is "a proper [ordered] time sequence" even though numbers 3 and 6-8 are missing. Therefore,

applicants respectfully submit that no new matter was introduced by the previous amendment.

However, to expedite prosecution of this case and to avoid any confusion,

applicants have again, without prejudice, amended the specification replacing the objected-to

phrase "a proper time sequence of data received" by the phrase "a desirable or acceptable

sequence of data received."

Applicants respectfully submit that this amendment does not introduce new

matter. (See e.g., discussion above with reference to the last sentence in the Background of the

Invention section, and as previously cited: "dropping frames" page 7 lines 21 34; "removing . . .

[frames]" page 8 lines 1-10; "dropping frames" page 8 lines 21-28 and page 9 lines 5-12; and

"adaptable codecs" page 11, lines 11-23).

§ 112 claim rejections,

Applicants have amended claims 1, 13 and 25 for clarity. In particular, these

claims have been similarly amended to recite that an estimate of the current bandwidth available

for transmitting data from a sender to a receiver is maintained. This estimate involves a live

measure of congestion. Data flow from the sender to the receiver is adjusted in real time in response to the current measure of congestion on the network. Adjusting the data flow for transmission in real time includes dropping a data frame if required.

These amendments are fully supported in the specification. (See e.g., "Sender maintains current an upper bound . . . providing an indication of available bandwidth" page 3 lines 16 -21; "real time transmission." page 1 line 31; "dropping frames" page 7 lines 21 34; "removing . . . [frames]" page 8 lines 1-10; "dropping frames" page 8 lines 21-28 and page 9 lines 5-12; and "adaptable codecs" page 11, lines 11-23).

Further, the specification fully and clearly describes the claimed invention. See e.g., page 3 lines 25- page 4 line 2; page 7 lines 1-9, lines 12-15; page 8 lines 9-20 and page 9 lines 1 –12, all of which describe adjusting data flow in a real time response to live measures of network congestion.

For at least the foregoing reasons, applicants respectfully submit, the amended claims 1, 13, and 25 fully comply with § 112, first paragraph.

<u>Prior art rejections</u>

Applicants respectfully traverse the prior art rejections.

Independent claims 1, 13, and 25 have been rejected as obvious from Keshav and Derby.

As previously noted, applicants' inventive methods and systems concern data transmission from a sender to a receiver over a digital communications network. These methods and systems, according to claims 1, 13, and 25, involve: maintaining current estimates of the available transmission bandwidth on the network; and accordingly in a real time response to the current estimate, adjusting the flow of data for transmission so that the data is transmitted

without congestion and received in a timely manner (i.e. in an acceptable or proper sequence) by the receiver (e.g., to preserve a proper time ordering or sequence of video frames viewed by the receiver). Adjusting the flow of data for transmission includes dropping data frames as appropriate or needed.

Applicants note that the cited references Keshav, Derby and Gittins, whether taken individually or in combination, do not show all the elements of the applicants' inventive methods and systems for data modification/transmission in an uncongested manner over a network. For example, none of the cited references shows, teaches, or suggests dropping data frames in response to network congestion in a manner which preserves the usefulness of received data set. Accordingly, independent claims 1, 13, and 25 are patentable over the cited references. Further, claims 2-12, 14-24 and 26-36, which depend from a respective one of independent claims 1, 13, and 25, also are patentable.
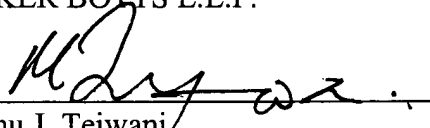
Conclusion

For the reasons set forth above, applicants respectfully submit that this application is now in condition for allowance. Reconsideration and prompt allowance of which are respectfully requested.

Applicants request that the Examiner should kindly contact the undersigned attorney by telephone in case there are any remaining issues that need to be resolved.

Respectfully submitted,

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